

# Vermont Wetlands Program



**Municipal Day 2022**

Presented by Elijah Schumacher  
VT Wetlands Program

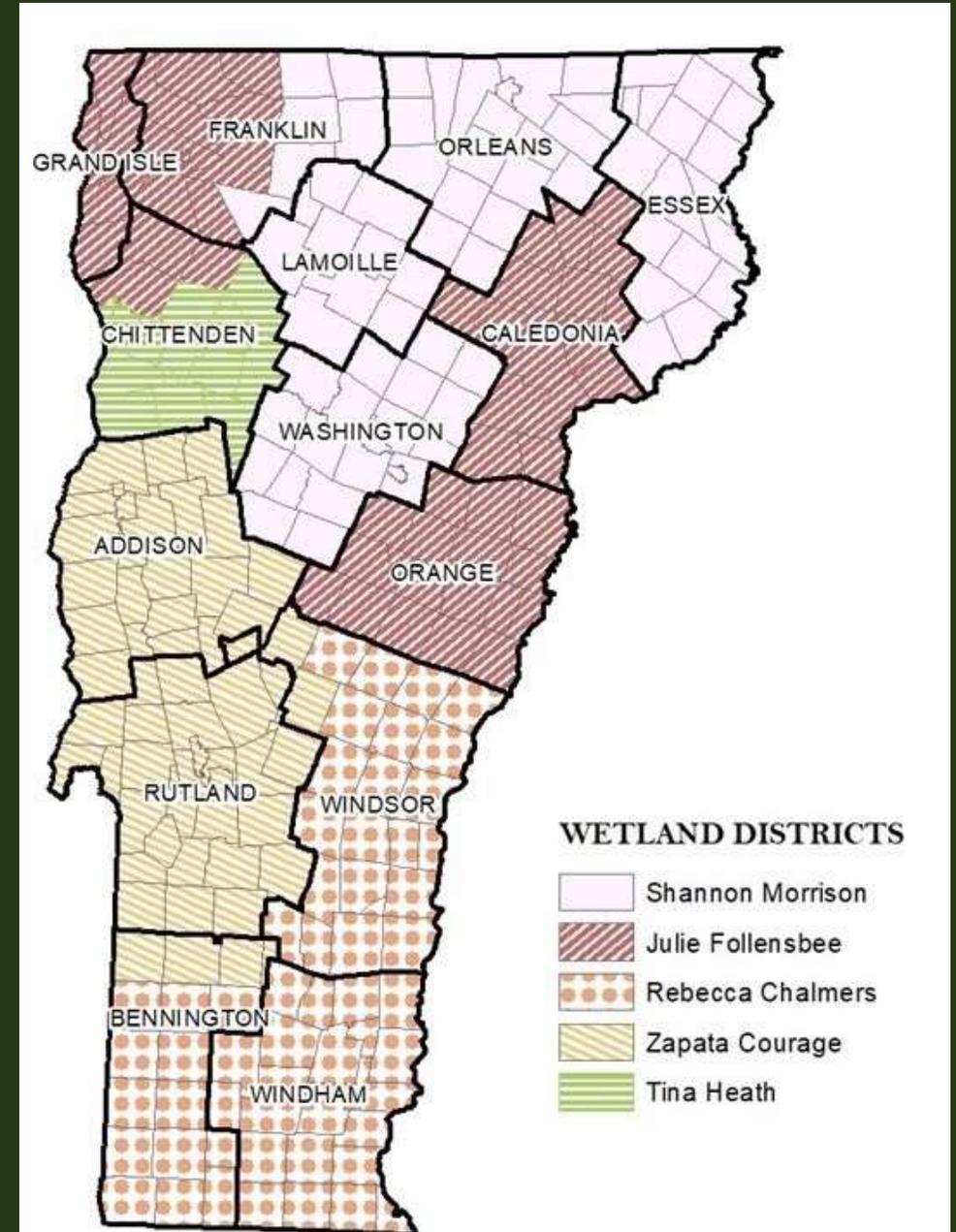
# Contact your District Wetland Ecologist

**Our Services are Free:**

- Aerial photo review
- Site Visit
- Pre-application review
- Address compliance issues
- Help answer questions!

**Or hire a Wetland Delineator!**

Firstname.Lastname@Vermont.gov



# Wetland Definition has 3 Parts:



Hydric  
Soils



Hydrophytic  
Vegetation



Hydrology

# Wetland Hydrology

Hydrology “primary indicators” include: **surface water**, soil saturation, **high ground water table**, algal mat, oxidized root channels, hydrogen sulfide odor, or **inundation visible on aerial imagery**.

Hydrology “secondary indicators” include: water-stained leaves, **stunted or stressed plants**, geomorphic position, **drainage patterns**

*Inundation or saturation to within soil surface for at least 5% of growing season in most years*



# Wetland Plants

Plant species vary in their tolerance of wet conditions.

Wetland plants – hydrophytic (water-loving) vegetation – are adapted to low-oxygen (anaerobic) conditions that are associated with prolonged saturation or flooding.

Places dominated by water-loving plants have met the plant criteria for wetland identification.



# Wetland Soil

Hydric mineral soils  
have gray colors with  
orange/red mottling:



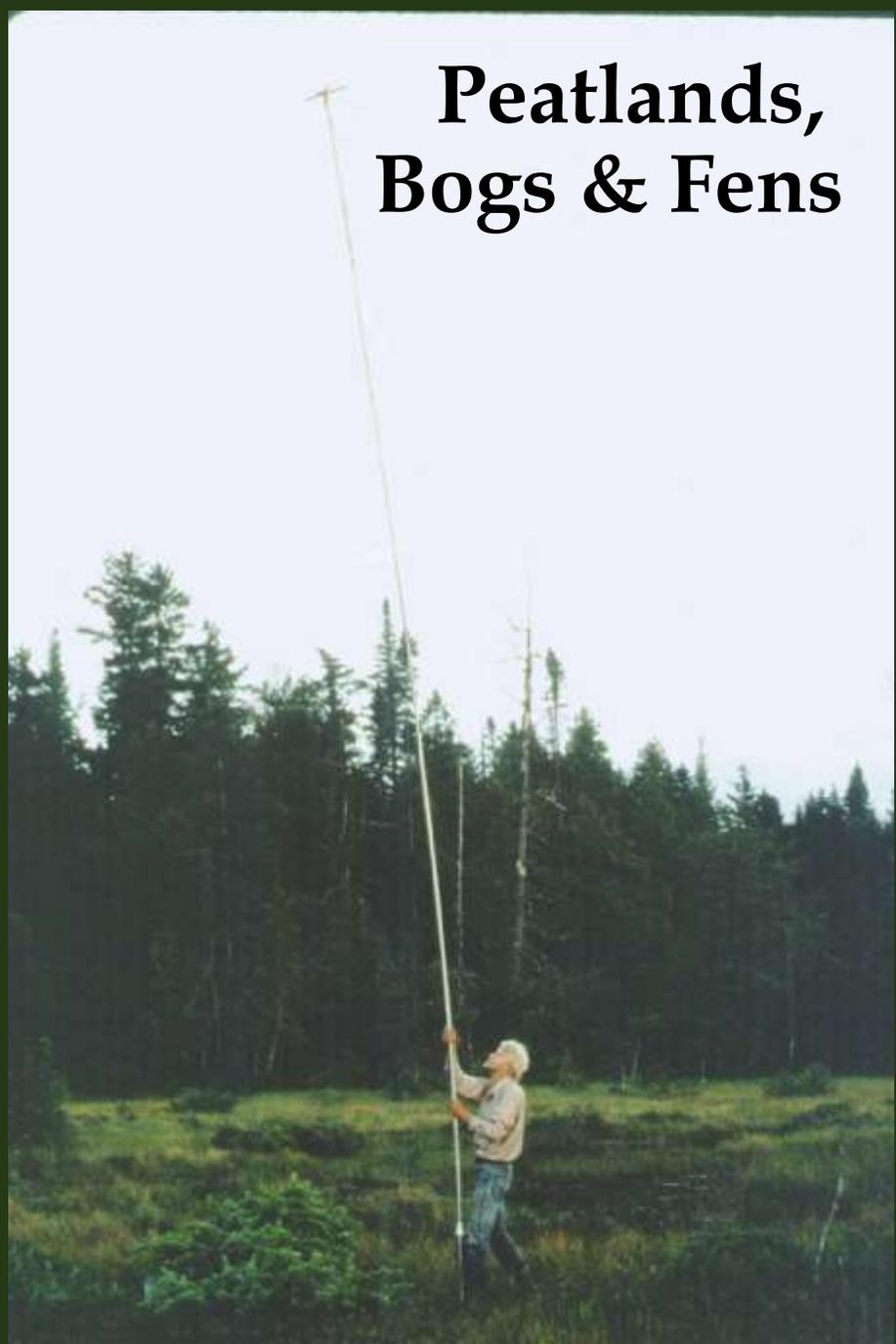
Hydric organic soils  
are very dark,  
almost black:



# Vermont has many wetland types!

- Topography and landscape position
- Hydrologic regime
- Ease of identifiability





# Peatlands, Bogs & Fens



A photograph of a marshy pond. In the foreground, several purple iris flowers with long green leaves are in bloom. The water is dark blue and reflects the sky and the surrounding greenery. In the background, there is a dense forest of tall trees and a line of reeds along the water's edge. The text "Deepwater Marsh" is overlaid on the right side of the image.

# Deepwater Marsh

# Vernal Pools



**Floodplain swamps,  
dominated by  
Green/Black Ash and  
Silver Maple**



# Wet Meadows





Where is the wetland?

# Wetland ID Tips and Tricks

## Hydrology

- ☞ Are there water sources (ponds, streams, lakes, seeps, springs) nearby?
- ☞ Does it pass the “squish foot” test
- ☞ Do you hear frogs calling or is it “just kinda wet over there in the spring”?
- ☞ If you dig a hole will it fill with water?
- ☞ Do trees have shallow roots?
  - ☞ Fluted trunks?
  - ☞ Debris or water lines on trunks?
- ☞ Are there lots of tip – ups?



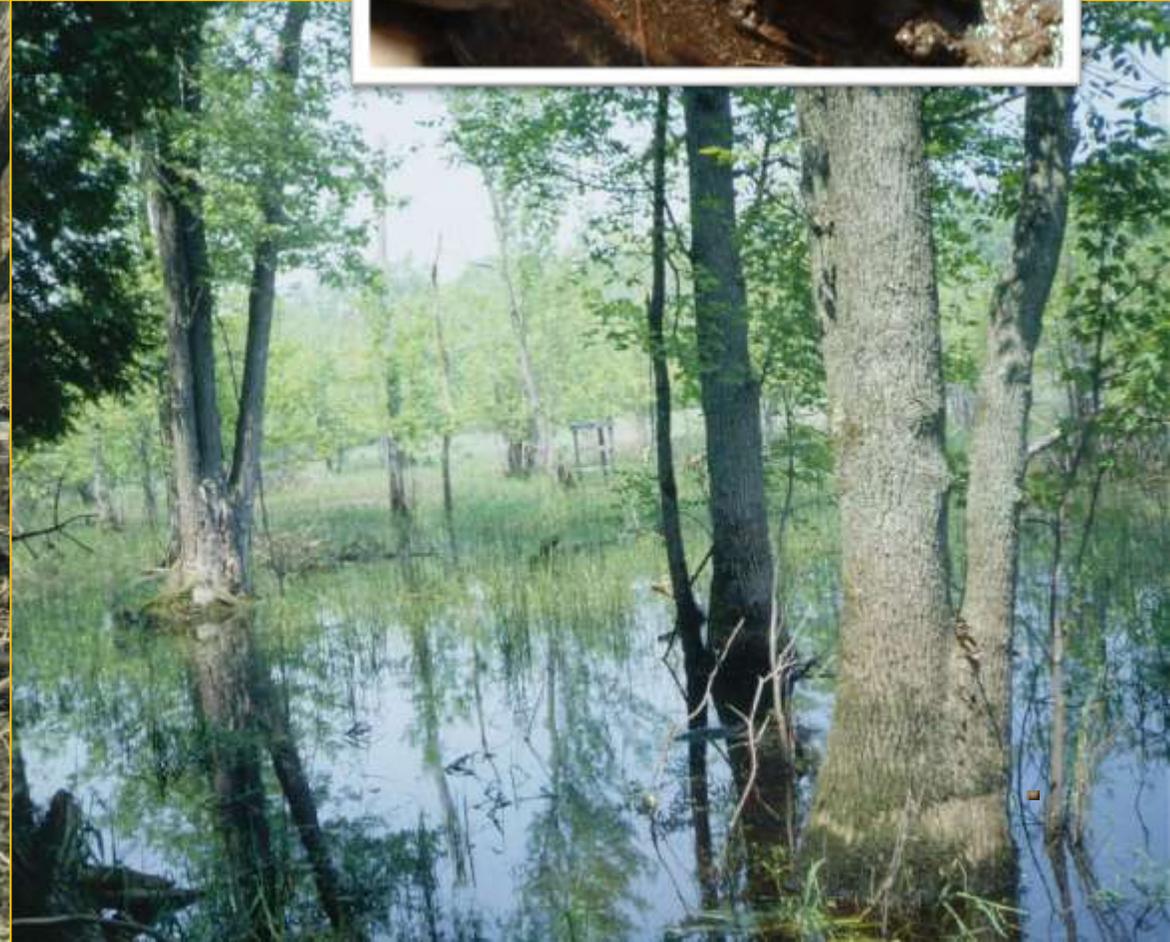
# Shallow Roots and Fluted trunks



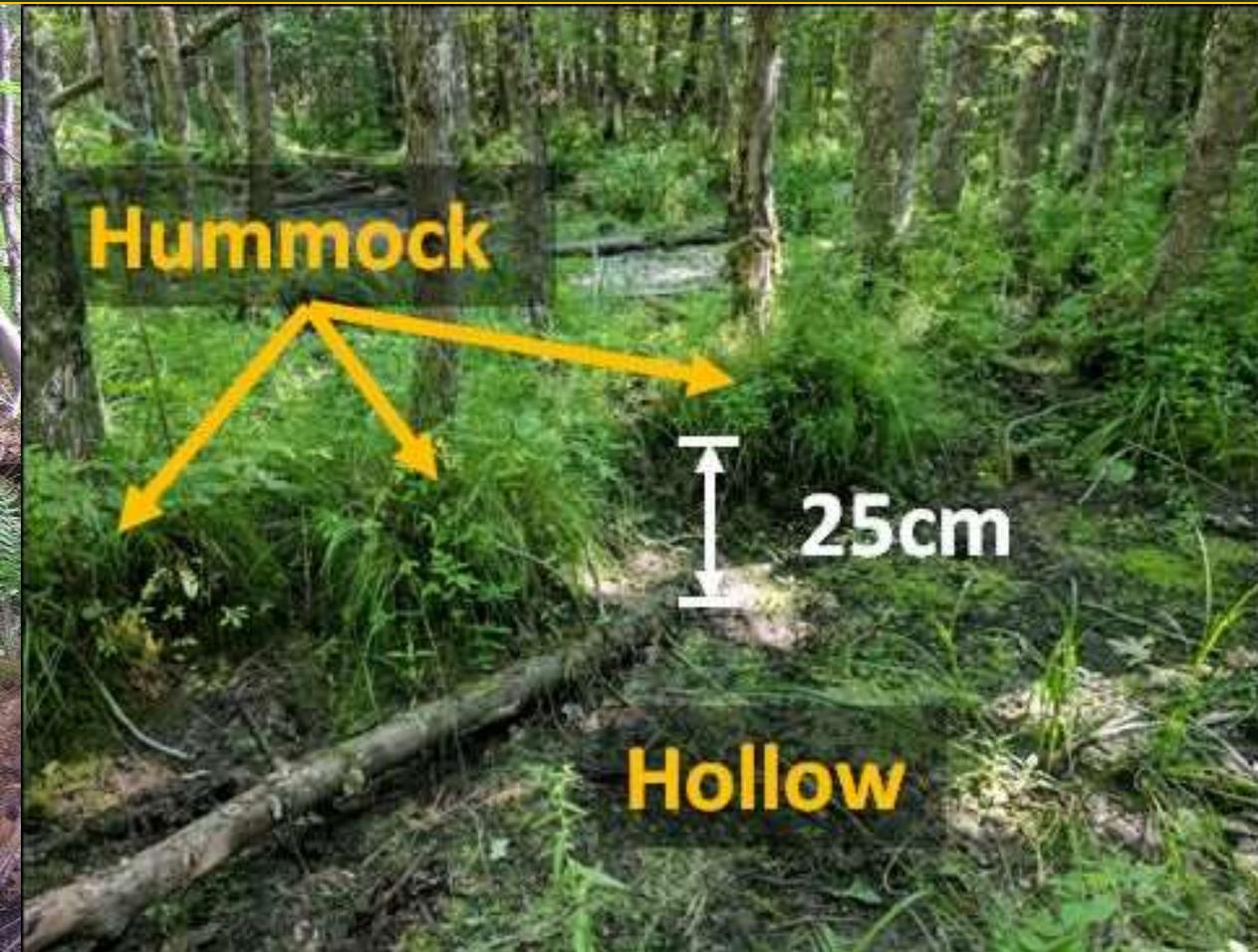
# Tip ups



# Water lines and flood debris



# Microtopography





Jewelweed



Cinnamon Fern



Phragmites



Hop sedge



Blueflag Iris



Joe Pye weed



Marsh marigold



Speckled alder



Pussy willow



Red ozier dogwood



Highbush blueberry

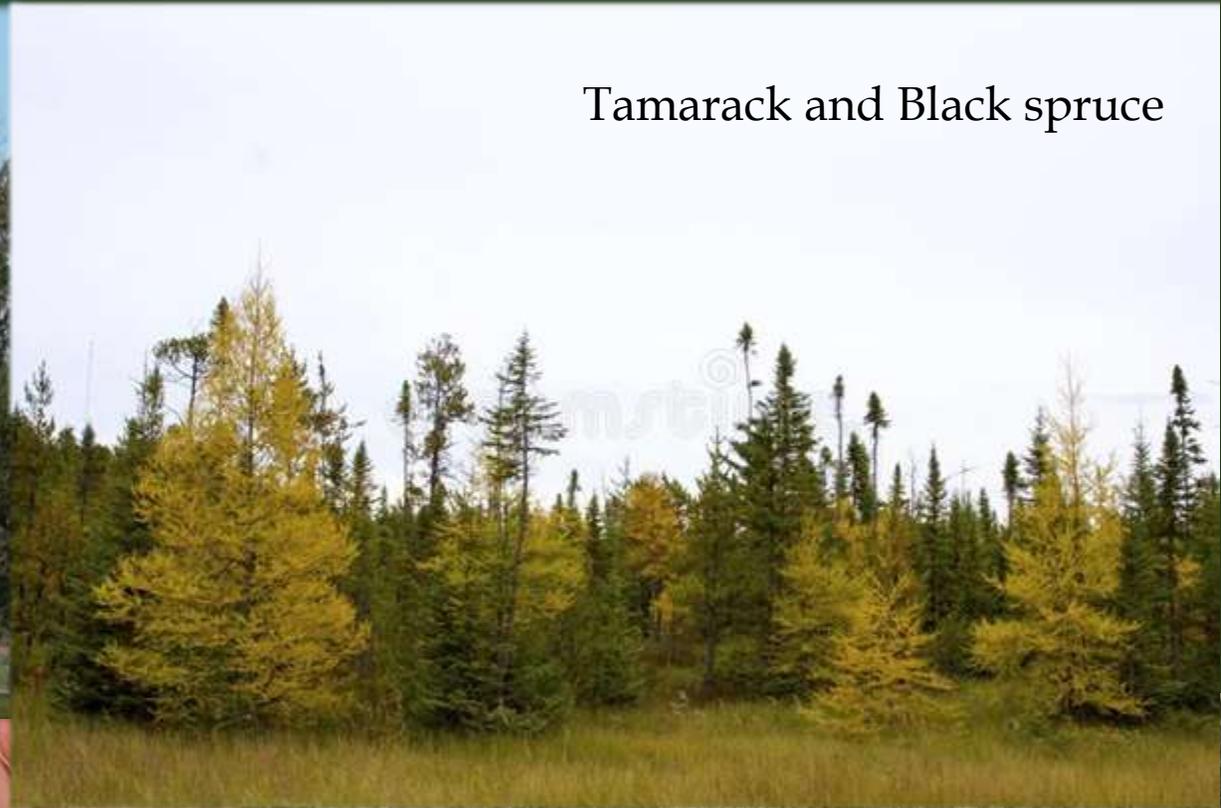




Black Ash



Elm



Tamarack and Black spruce



Cedar



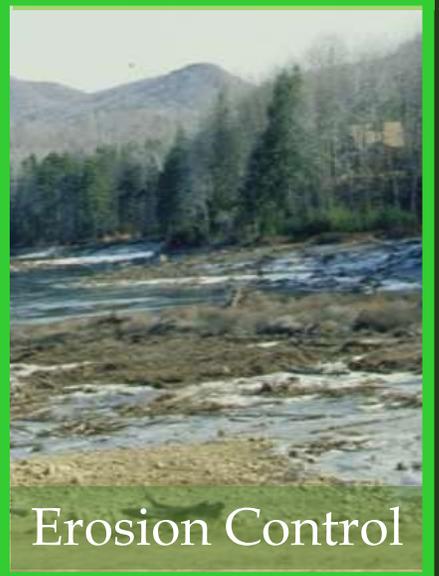
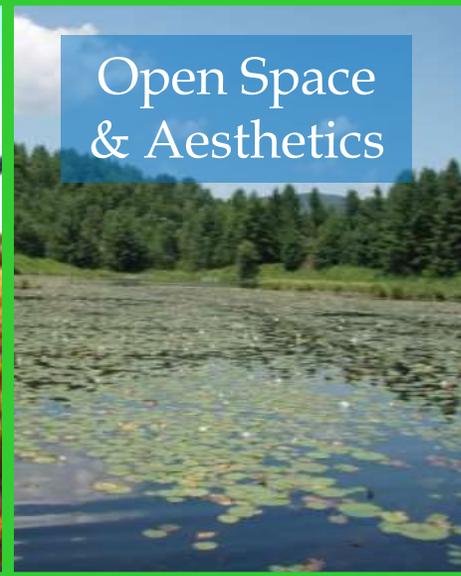
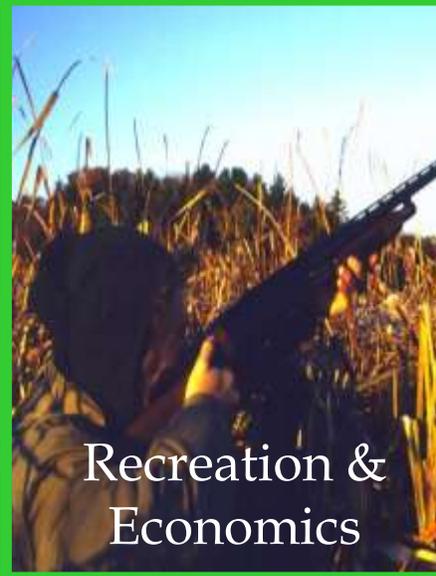
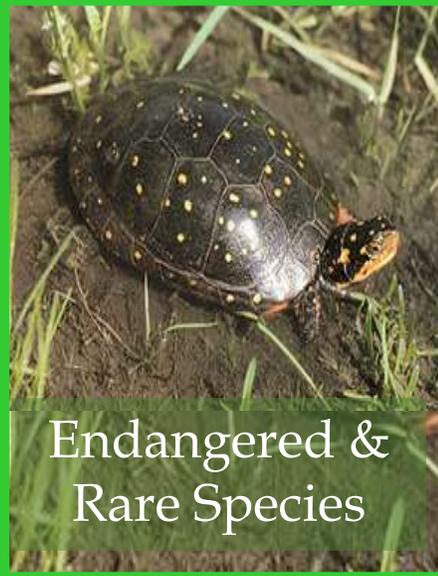
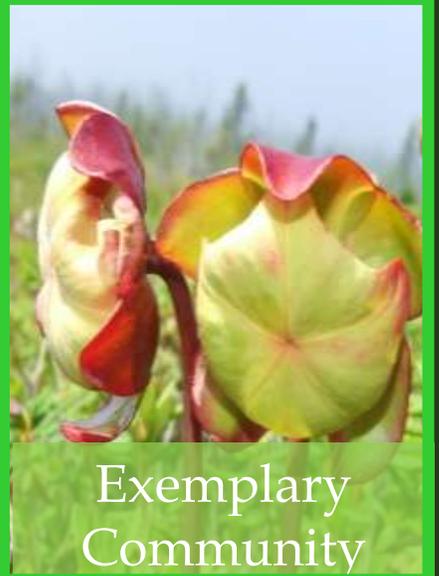
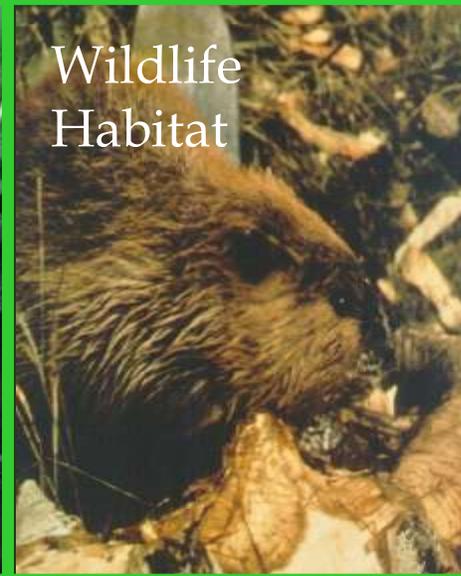
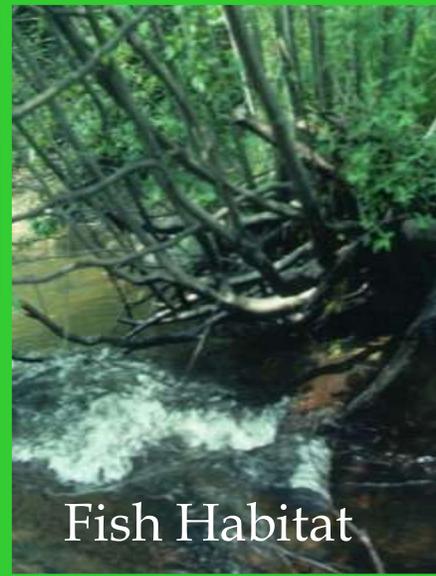
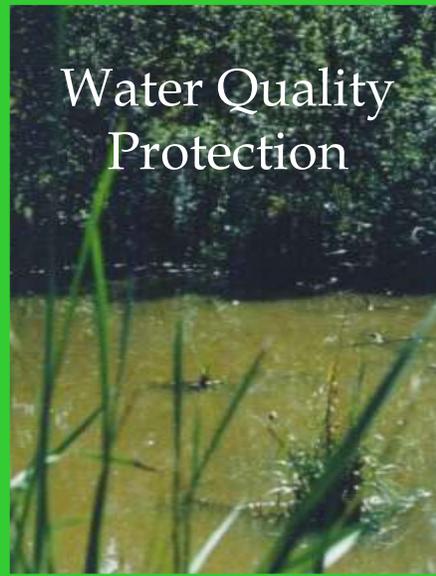
Red and Silver Maple



Green Ash



# Vermont's Wetlands Provide



# Wetland Regulation Basics

## Who regulates wetlands?

- Army Corps of Engineers since 1975
- Vermont Wetland Rules since 1990
- Towns in Vermont may regulate wetlands

Vermont Wetland Rules uses the 1987 Federal Manual for Identifying and Delineating Jurisdictional Wetlands & the 2012 Northeast Regional Supplement

# Jurisdictional Wetlands



- Not all wetlands are “jurisdictional”
- Class II significant wetlands are determined based on sufficiently high attainment of wetland functions and values

# Jurisdictional Wetlands

- Any wetland on the VSWI map
- Any wetland contiguous or connected to the VSWI mapped wetland
- Any wetland that is the same type and size as what is on the VSWI maps (1/2 acre or larger)



- Adjacent to a stream, lake, pond, or river
- Vernal pools
- Special and unique wetlands like bogs or fens OR known to harbor RTE species
- Headwaters wetland

# Wetland Buffer Zone

Regulated zone of upland around a wetland which can provide protection to functions and values

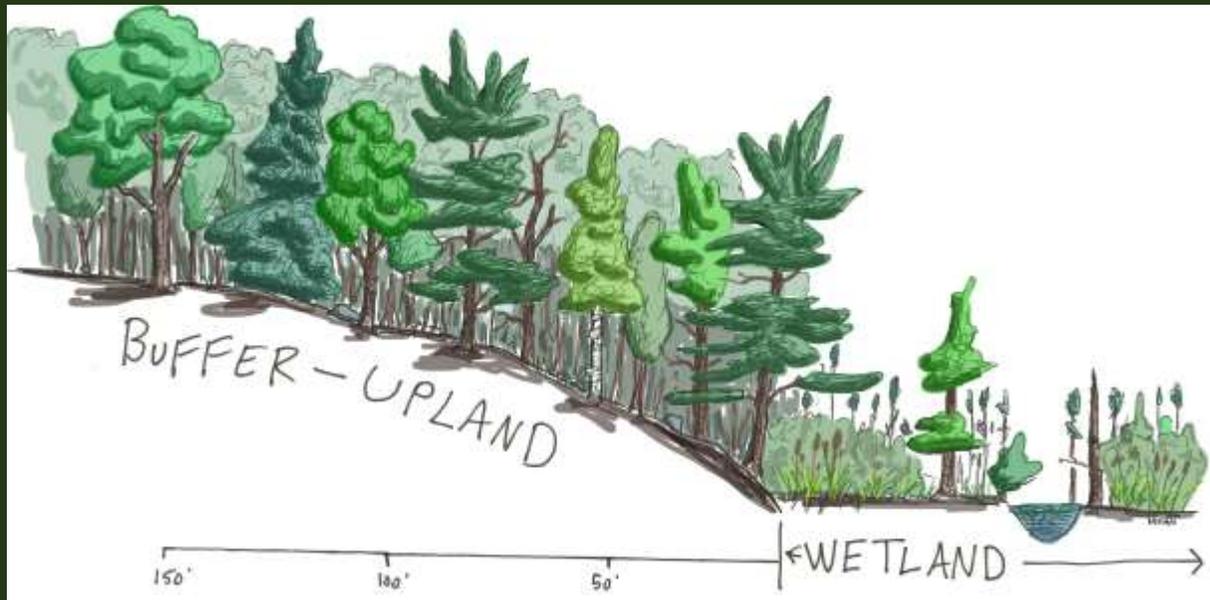
Class I = 100-ft buffer (or larger)

Class II = 50-ft buffer (or larger)



## Natural buffers

- Filter sediments/nutrients
- Prevent erosion
- Protect and provide additional wildlife habitat
- Prevent spread of invasives and protects against other disturbance.





## National Wetlands Inventory maps MISS

- 46% of small and forested wetlands
- 39% of total area of wetlands

Per UVM study of Charlotte and Hinesburg aerial photography

# Vermont Wetlands Rules updates

## General Determination and VSWI edits

- ☞ Updates to VSWI mapping in Missisquoi River basin
- ☞ General Determination

### Public Meetings

- ☞ October 31, 2022 – 5:00PM – Welcome Center Hall, St Johnsbury
- ☞ November 1, 2022 – 5:00PM – Damon Hall, Hartland
- ☞ November 2, 2022 – 5:00PM – Rutland Opera House, Rutland
- ☞ November 4, 2022 – 5:00PM – Swanton Village Complex, Swanton

# Wetland Inventory Maps

Map Layers

- Wetland Map
  - Wetland Inquiry
  - Wetland Inquiry (Status)
  - Fish and Wildlife
  - Watershed Protection
    - Vernal Pools Confirmed – AE/VCE
    - Vernal Pools Unconfirmed – AE/VCE
    - VT List of Priority Rivers and Streams
    - VT List of Priority Lakes and Ponds
    - Wetlands - VSWI
    - Wetlands - VSWI Advisory Layer
    - DFIRM Floodways
    - DFIRM Preliminary Floodways
    - Special Flood Hazard Areas (All Available)
    - Special Flood Hazard Areas (Preliminary)
  - Geology
  - Drinking and Groundwater Protection
  - ANR Basemap Data

Show Legend Filter...

Disclaimer Map Layers

Wetlands Inventory Map Vermont Agency of Natural Resources

Results (9)

Wetland Tools

- RARE AND PROTECTED SPECIES**
  - Element Occurrence ID: 392
  - State Protection:
  - Federal Protection:
- RARE AND PROTECTED SPECIES**
  - Element Occurrence ID: 1088
  - State Protection:
  - Federal Protection:
- Significant Natural Community**
  - Natural Community: Sugar Maple-Ostitch Fern Riverine Floodplain Forest
  - Element Occurrence ID: 4789
  - State Rank: S2
- Significant Natural Community**
  - Natural Community: Silver Maple-Ostitch Fern Riverine Floodplain Forest
  - Element Occurrence ID: 3784
  - State Rank: S3
- Significant Natural Community**
  - Natural Community: Silver Maple-Sensitive Fern Riverine Floodplain Forest
  - Element Occurrence ID: 5671
  - State Rank: S3
- WETLAND- VSWI**
  - CLASS: 2
  - WETLAND TYPE: 7
- WETLAND- VSWI ADVISORY**
  - WETLAND CLASS: Presumptive Class 2
  - NOTES: By George Springinger for the Middlebury Conservation Committee
- HYDRIC SOIL - LF**
  - Limerick silt loam, very wet
  - HYDRIC: Y
  - SOIL FACT SHEET
- PARCELS**
  - PARCEL NUMBER: 007021.000
  - SPAN: 387-120-11851
  - YEAR: 2013
  - ACRES: 0

© AND © 2010 NAVTEQ © 2017 Microsoft Corporation Earthstar Geographics - SDI Image courtesy of USGS © 2010 DigitalGlobe

Disclaimer: NOT accurate and 39% of VT wetlands are not mapped but may be jurisdictional.

# Victory Basin wetland complex



## Covered or Answered:

- Wetland definition
- Yes, a wetland is present
- Evaluate wetland functions and values
- Yes, the wetland is jurisdictional under the Vermont Wetland Rules



## Next Questions:

- Does the activity need a permit?
- What are the next steps?

# Does the Activity Proposed Need a Permit?

**YES**

- Activity occurs in a Class I or II wetland or buffer zone and is not considered an allowed use:
  - Grading, filling, ditching or dredging
  - Removal of vegetation such as tree cutting or conversion
  - Construction of buildings, roads, buried utilities or infrastructure



**NO**

- Activity occurs in a Class III wetland
- Activity proposed outside of Class II or Class I wetland and buffer.
- Activity qualifies as an allowed use.
- Wetland is exempt

Farmland is  
exempt...



...as long as it remains  
in regular rotation.

# Allowed Uses (AU)

- ☞ There are a lot! (25)
- ☞ If you think it's an AU – contact your District Ecologist and confirm!
- ☞ Several are likely most relevant to municipal interests
  - ☞ 6.8 & 6.22– Utilities maintenance and new pole/line installation
  - ☞ 6.12 – Non-substantial expansion/modification
  - ☞ 6.14 & 6.24 – Pond maintenance and dry hydrant installation
  - ☞ 6.16 – Boardwalk with Best Management Practices (BMPs)
  - ☞ 6.19 – Activities in lawns incidental to ordinary residential use

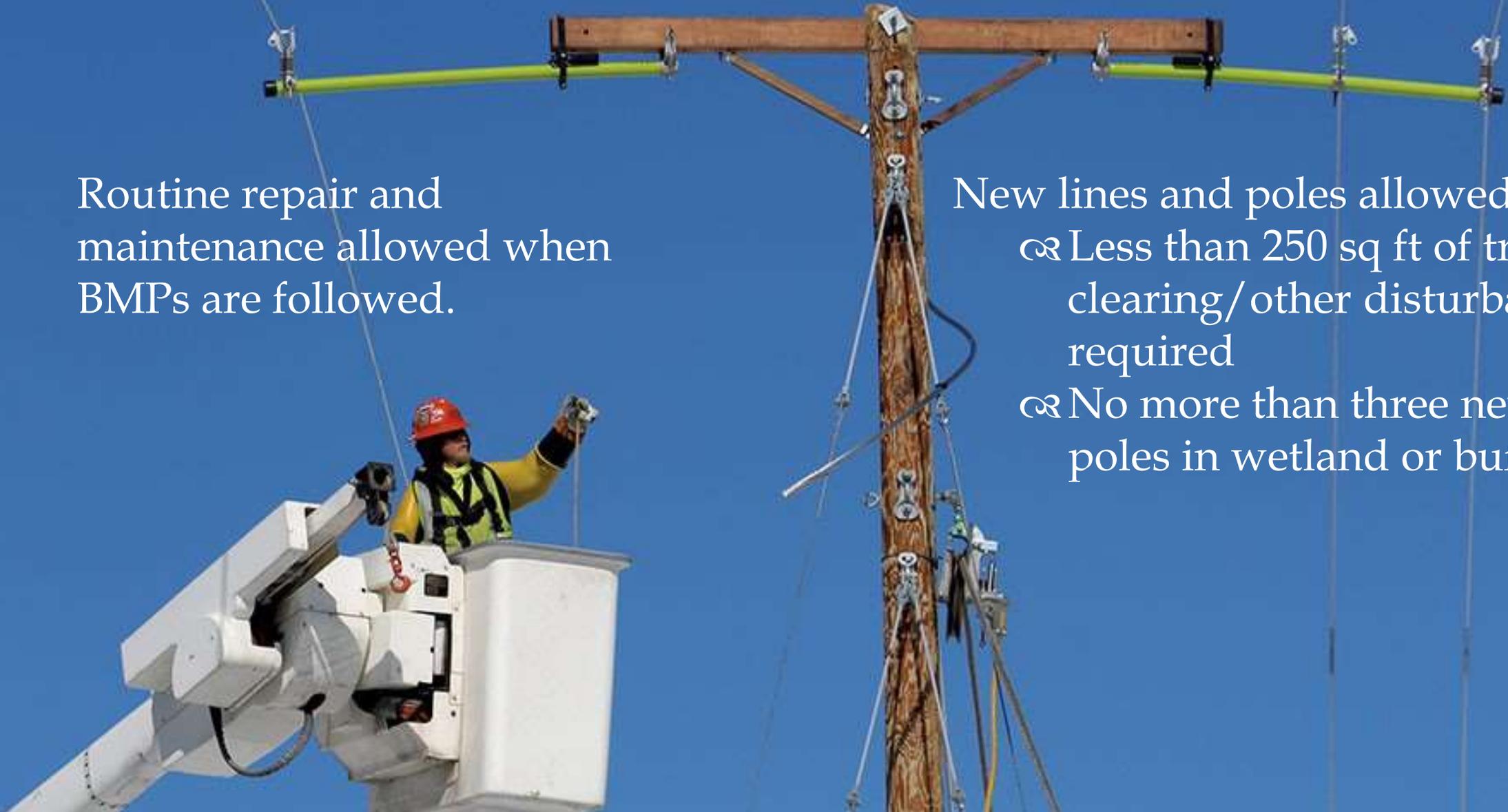
# Allowed Uses

6.8 & 6.22- Utilities maintenance and new pole/line installation

Routine repair and maintenance allowed when BMPs are followed.

New lines and poles allowed when:

- ∞ Less than 250 sq ft of tree clearing/other disturbance required
- ∞ No more than three new utility poles in wetland or buffer



# Allowed Uses

## 6.12 – Non-substantial expansion/modification

- ☞ Frequently applied AU
- ☞ “substantial expansion” typically interpreted as more than 250 sq ft
- ☞ Examples include
  - ☞ Adding a deck, patio, or solarium onto house
  - ☞ Trenching to connect to a town sewer stub
  - ☞ Tear down and rebuild in same footprint
    - ☞ (Careful – need to take construction impacts into account)

# Allowed Uses

## 6.14 & 6.24– Pond maintenance and dry hydrant installation

- ❧ May **not** qualify if
  - ❧ Not recognizable as a pond
  - ❧ An on-stream pond
  - ❧ Natural pond (beaver impoundment)
  - ❧ Over two acres in size
  - ❧ Originally constructed in violation
  - ❧ Work results in discharge to waterways
  - ❧ Work enlarges footprint



# Allowed Uses

## 6.16 – Boardwalks etc. with BMPs

### No

- ❧ Draining
- ❧ Dredging
- ❧ Ditching
- ❧ Filling
- ❧ Grading
- ❧ Cutting woody vegetation
- ❧ Altering flow

### Do

- ❧ Use appropriate materials
- ❧ Avoid amphibian breeding seasons
- ❧ Allow light and water to pass
- ❧ Keep equipment clean
- ❧ Work during dry periods
- ❧ Size structures appropriately



Boardwalks can be a great way to access and appreciate wetlands (and maybe see a moose) when properly constructed and maintained.



# Allowed Uses

## 6.19 – Lawn activities





# Avoidance and Minimization

- ☞ Must demonstrate there is no other practicable alternative on property owned or available that avoids wetland and buffer impacts
- ☞ Must use project design to avoid impacts to wetlands, buffers and their functions and values to the greatest extent possible
- ☞ Must offset potential impacts if they are unavoidable through minimization or restoration



# Permits

## Non-Reporting General Permit Registration

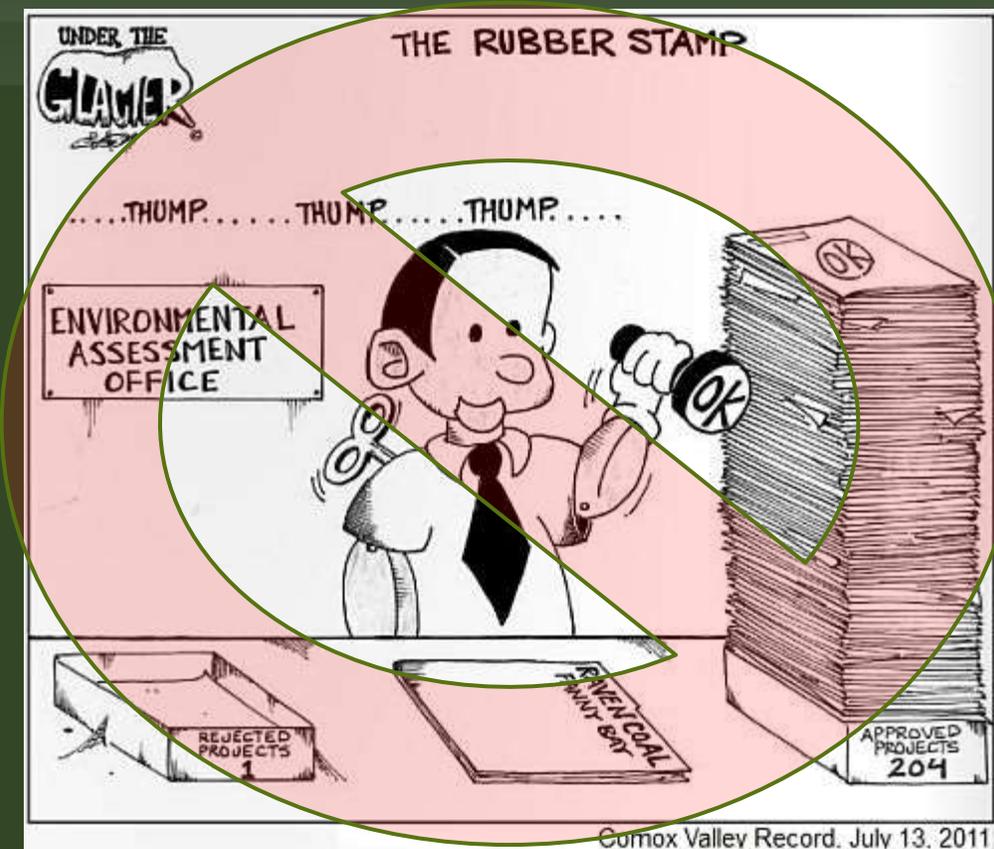
- Non fee-based registration for water quality projects such as
  - Stormwater practice retrofits
  - Eligible stream crossing projects
  - Failed wastewater replacements

## General Permit

- Simpler application and review process
- Has some limitations

## Individual Permit

- Relatively rigorous application and longer review turnaround
- Requires delineation and assessment of wetland function and values



# Non-Reporting General Permit Registration

- ❧ Eligible projects have a maximum of 5,000 sq ft of impact
- ❧ Water quality improvement practices on farms
  - ❧ Construction of stream crossings and trails/walkways
  - ❧ Access roads
  - ❧ Artificial wetlands
- ❧ Stormwater practice retrofits
  - ❧ For treatment of existing impervious surfaces – no new or expanded impervious
- ❧ Stream crossing projects which benefit
  - ❧ Public safety
  - ❧ Aquatic organism passage (AOP)
  - ❧ Flood resiliency improvement
- ❧ Failed wastewater replacements in managed buffer

# General Permit

- ❧ NON – eligible project types
  - ❧ More than 3,000 sq ft impacts proposed (non-linear)
  - ❧ More than 5,000 sq ft impacts proposed (linear)
  - ❧ More than 150 sq ft impacts to surface water margins
  - ❧ In Class I wetlands or buffer
  - ❧ In bogs, fens, vernal pools, headwater wetlands or buffer
  - ❧ Allowed uses
    - ❧ Unpermitted as built projects that should have acquired a permit initially
    - ❧ In wetlands significant for RTE or exemplary natural community functions
    - ❧ In perennial stream where project would need a stream alteration permit
    - ❧ Where additional conditions to protect wetland V&F are required



# Individual Permit

- ❧ For all projects not covered by AU, NRGP, or GP
- ❧ Requirements
  - ❧ Wetland delineation reviewed and accepted by WL program staff
  - ❧ Shapefile of subject wetland
  - ❧ Detailed discussion of mitigation sequence  
(avoid, minimize, restore/offset)
  - ❧ Finding that project will result in no undue adverse impact to wetland

# Municipalities can Partner

Before issuing a Building or Zoning permit:

- Check the ANR Atlas for VSWI + Advisory wetland + hydric soils layers.
- Consider recommending landowner contact the State Wetland Ecologist  
OR hire a wetland consultant.
- Consider whether the size of all infrastructure + homes can fit on the lot  
without requiring a Wetland Permit:

Utility right of ways

Outbuildings

Recreation paths or green space

Stormwater infrastructure

Wastewater (communal or individual septic)

Sidewalks

Lawns

second entrance for emergency if required by zoning

adequate parking

Wells

10' maintenance zone around buildings

Removing woody vegetation

# Town Zoning Rules & Violations

If there is a violation of a Town's wetland rules, there may be a violation of the Vermont or Army Corps wetland Rules:

We can help work to bring a landowner into compliance with the VT Wetland Rules

We can help review development proposals, new residential, commercial or subdivision for Town Clerks or Zoning Administrator to help identify any potential wetland concerns or required permitting.

You can direct concerned citizens to report potential violations of environmental regulations to: 802-828-1254

or online (search for "Vermont report environmental complaint") at <https://dec.vermont.gov/content/environmental-violation-report>

# Vermont Wetland Tools

Vermont Wetlands Program Homepage hosts:

- VT Wetlands Inventory Map and Tutorial
- VT Wetland Inquiry Forms
- Regulatory Links VT Wetland Rules
  - Individual Permit
  - General Permit
  - Instructions
- Allowed Use and Procedural/Definition
- Guidance Documents



*Questions?*



# Contact your District Wetland Ecologist

**Our Services are Free:**

- Aerial photo review
- Site Visit
- Pre-application review
- Address compliance issues
- Help answer questions!

**Or hire a Wetland Delineator!**

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